

Translation

PATENT COOPERATION TREATY

PCT/JP2004/013031



PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference TU04-0623WO1 | FOR FURTHER ACTION See Form PCT/IPEA/416 | |
| International application No. PCT/JP2004/013031 | International filing date (day/month/year) 08 September 2004 (08.09.2004) | Priority date (day/month/year) 30 September 2003 (30.09.2003) |
| International Patent Classification (IPC) or national classification and IPC C23C 14/34, C01G 9/02 | | |
| Applicant NIKKO MATERIALS CO., LTD. | | |

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|---|
| 1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. |
| 2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet. |
| 3. This report is also accompanied by ANNEXES, comprising: a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>2</u> sheets, as follows: <div style="margin-left: 40px;"><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</div> b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions). |
| 4. This report contains indications relating to the following items: <div style="margin-left: 20px;"><input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</div> |

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|---|---|
| Date of submission of the demand 09 February 2005 (09.02.2005) | Date of completion of this report 02 March 2005 (02.03.2005) |
| Name and mailing address of the IPEA/JP | Authorized officer |
| Facsimile No. | Telephone No. |

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on translations from the original language into the following language _____, which is language of a translation furnished for the purpose of:
- ☐ international search (under Rules 12.3 and 23.1(b))
- ☐ publication of the international application (under Rule 12.4)
- ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

- ☐ The international application as originally filed/furnished
- ☒ the description:
- pages _____ 1-9 _____, as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- pages _____, as originally filed/furnished
- pages* _____, as amended (together with any statement) under Article 19
- pages* _____ 1-14 _____ received by this Authority on _____ 09 February 2005 (09.02.2005)
- pages* _____ received by this Authority on _____
- ☒ the drawings:
- pages _____ 1 _____, as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

| | | | |
|-------------------------------|--------|-------|-----|
| Novelty (N) | Claims | 4-14 | YES |
| | Claims | 1-3 | NO |
| Inventive step (IS) | Claims | 12-14 | YES |
| | Claims | 1-11 | NO |
| Industrial applicability (IA) | Claims | 1-14 | YES |
| | Claims | | NO |

2. Citations and explanations (Rule 70.7)

Document 1: JP, 2003-192346, A (Nippon Telegraph and Telephone Corporation), July 9, 2003 (07.09.03), Example 1 (Family: none)

Document 2: JP, 2001-039713, A (Nippon Telegraph and Telephone Corporation), February 13, 2001 (02.13.01), Example 2 (Family: none)

Document 3: Toshihiko MATSUMOTO et al., "Kojundo Sanka Aen Nenketsutai no Denkiteki Seishitsu," Nippon Daigaku Bunri Gakubu Shizen Kagaku Kenkyusho Kenkyu Kiyo, 1981, No. 16, pp. 5.21-5.26

Claims 1-3

The inventions described in claims 1-3 do not appear to be novel based on documents 1, 2 and 3 cited in the ISR. Documents 1 and 2 describe using as a starting material a high purity zinc metal having purity of 99.99999% to obtain zinc oxide powder having a particle size of several μm and impurity concentration of 1ppb or less. Document 3 describes using as a starting material a high purity zinc metal having purity of 99.999% (equivalent to impurity of less than 10ppm) to obtain zinc oxide powder. As documents 1-3 describe obtaining zinc oxide powder having such low impurity concentration as described above, this examination finds that the concentrations of C, Cl and S, which can also be considered types of impurities, are also low.

Claims 4-11

The inventions described in claims 4-11 do not appear to involve an inventive step based on documents 1, 2 and 3 cited in the ISR. With zinc oxide powder having a low impurity concentration described in documents 1-3 as a starting material, producing a zinc oxide sputtering target having a low impurity concentration, as well as obtaining a zinc oxide thin film having a low impurity concentration, could be easily conceived of by a party skilled in the art.

Claims 12-14

The inventions described in claims 12-14 are not disclosed in any of the documents cited in the ISR; therefore, they appear to be novel and involve an inventive step. In particular, a method of producing zinc oxide wherein a solvent extract and activated carbon treatment are combined could not be easily conceived of by a party skilled in the art.

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

(A) Based on the descriptions in comparative example 3, in the inventions relating to claims 12 and 13, to achieve the effect of the invention of the present application, the alkaline solution type needs to be specified as ammonium hydroxide.